

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

SON, Min

19th Floor, City Air Tower 159-9, Samseong-dong, Gangnam-gu, Seoul 135-973 Republic of Korea

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **12 JULY 2005 (12.07.2005)**

Applicant's or agent's file reference
PCTA9503-124

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/000784

International filing date (day/month/year)

18 MARCH 2005 (18.03.2005)

Priority date(day/month/year)

18 MARCH 2004 (18.03.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC7 C07K 14/00

Applicant

SJ BIOMED INC. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

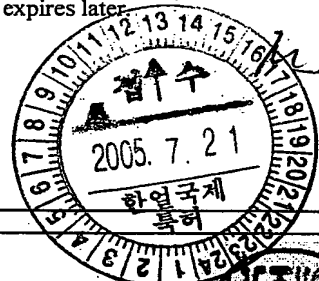
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.



Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

PARK, JEONG UNG

Telephone No. 82-42-481-8159

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000784

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☒ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☒ in written format
☒ in computer readable form

c. time of filing/furnishing

- ☒ contained in the international application as filed.
☒ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000784

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

2. Citations and explanations :

This present invention relates to an immunogenic hybrid polypeptide, which comprises an amino acid sequence of a mimetic peptide of a B cell epitope of apolipoprotein B-100 and in which a C-terminus of the mimetic peptide is fused to an N-terminus of a helper T cell epitope, and a vaccine composition for preventing or treating obesity comprising the same.

The following documents have been considered for the purpose of this report:

D1: US 6284533B1 (Sep. 4, 2001)

D2: KR 2002-0018971A (Mar. 9, 2002)

1. Novelty and Inventive Step

D1 provide a plasmid-based vaccine of the combination of DNA segments coding for one or more B cell epitopes of cholesteryl ester transfer protein (CETP) and one or more broad range helper T cell epitopes. However, the present invention shows a difference in a mimetic peptide of a B cell epitope of apolipoprotein B-100 in comparison with D1, which has a function CETP in modulating the levels of cholesteryl esters and triglycerides associated with various classes of lipoproteins. D2 only discloses a mimetic peptide of an epitope of apo B-100 having an anti-obesity effect. In this present invention, an immunogenic hybrid polypeptide which comprises an amino acid sequence of a mimetic peptide of a B cell epitope of apolipoprotein B-100 and in which a C-terminus of the mimetic peptide is fused to an N-terminus of a helper T cell epitope, and a vaccine composition for preventing or treating obesity comprising the same is not described in any of the prior art. Therefore, the subject-matter of claims 1-15 is considered to be novel and to involve an inventive step [PCT Article 33(2)-33(3)].

2. Industrial Applicability

The subject-matter of claims 1-15 is considered to be industrially applicable [PCT Article 33(4)].